{In Archive} Fw: West Lake landfill -- HQ comments on Focused Feasibility Study

Dan Gravatt to: Cecilia Tapia, Robertw Jackson, DeAndre Singletary 10/19/2010 09:57 AM

Archive: This message is being viewed in an archive.

FYI. Note that HQ's comments (originally provided by Rich Kapuscinski) had changed significantly from those discussed at the comment coordination meeting on September 22 even before Charles O. made the redlines in the attached document.

Daniel R. Gravatt, PG
US EPA Region 7 SUPR / MOKS
901 North 5th Street, Kansas City, KS 66101
Phone (913) 551-7324 Fax (913) 551-7063

----- Forwarded by Dan Gravatt/R7/USEPA/US on 10/19/2010 09:55 AM -----

From: Audrey Asher/R7/USEPA/US
To: Dan Gravatt/R7/USEPA/US@EPA
Date: 10/12/2010 11:16 AM
Subject: Fw: West Lake landfill -- comments on Focused Feasibility Study

---

----- Forwarded by Audrey Asher/R7/USEPA/US on 10/12/2010 11:16 AM -----

From: Charles Openchowski/DC/USEPA/US
To: Charles Openchowski/DC/USEPA/US@EPA
Cc: Audrey Asher/R7/USEPA/US@EPA, David Cozad/R7/USEPA/US@EPA, Earl Salo/DC/USEPA/US@EPA, John Michaud/DC/USEPA/US@EPA, Mary-Kay Lynch/DC/USEPA/US@EPA
Date: 10/12/2010 10:08 AM
Subject: Re: West Lake landfill -- comments on Focused Feasibility Study

---

[this time with attachment]

Charles Openchowski Hi Dave, as we discussed, I asked OSWER i... 10/12/2010 11:06:59 AM

From: Charles Openchowski/DC/USEPA/US
To: David Cozad/R7/USEPA/US@EPA
Cc: Mary-Kay Lynch/DC/USEPA/US@EPA, John Michaud/DC/USEPA/US@EPA, Earl Salo/DC/USEPA/US@EPA, Audrey Asher/R7/USEPA/US@EPA
Date: 10/12/2010 11:06 AM
Subject: West Lake landfill -- comments on Focused Feasibility Study

---

Hi Dave, as we discussed, I asked OSWER if I could comment on the draft FFS prepared by the PRPs, to make sure all the major issues get on the table at this stage -- here are the comments I provided to Rich Kapucinski this morning -- as you will see, most have to do with the fact that the draft FFS still does not address and deal with the data, conclusions, and recommendations in the two NRC reports that were published regarding this site -- please let me know if you have any questions. thanks

west lake comments 10.11.10.doc

CONFIDENTIAL/ DELIBERATIVE
DO NOT CITE AND/OR QUOTE

DRAFT

Overview and Summary of Primary OSRTI Comments on Supplemental Feasibility Study, Operable Unit 1 ("SFS") West Lake Landfill, Bridgeton, Missouri September 29, 2010

SIGNIFICANT SUBSTANTIVE ISSUES

Deleted: POTENTIALLY

1. The final document should include an updated, full and accurate characterization of the radioactive and other (e.g., RCRA hazardous waste) materials. Among other things, it should address EPA's principal threat determination guidance (OSWER Directive 9380.3-06FS). Based on information and data contained in the two NRC reports (1982 and 1988 described more fully in #2 below), it would be appropriate to conclude that the radioactive materials could pose "a significant risk to human health should exposure occur" because these materials have "high concentrations of toxic compounds." For example, in light of the fact that cleanup level is 5 pCi/g, it is significant that the NRC reports state that subsurface soil contamination concentrations of Ra-226 (radium) are up to 22,000 pCi per gram (1988 report at p. 9), concentrations of Bi-214 are up to 19,000 pCi/g (1982 report at p. 15), and the average concentration of Ra-226 is about 90 pCi/g and the average Th-230 (thorium) concentration is about 9000 pCi/g (1988 report at p. 14)

Deleted:

Deleted: in the context of the

Deleted: , which should

Consistent with the statute, NCP and program guidance, principal threat waste triggers the need to evaluate treatment options (which could be added to current Section 4). Thus, the FS and ROD need to explain how the remedial action at this site satisfies the preference for treatment (remedy uses treatment "to the maximum extent practicable"). This applies to any radiological and chemical principal threat waste (PTW) at the site.

Deleted: An authoritative, updated

Deleted: determination will likely

Deleted: also

Deleted: and update the NCP-mandated determination of whether treatment is practical for the radioactive materials in the landfill

2. The final document's updated, full and accurate characterization of the radioactive and other (e.g., RCRA hazardous waste) materials should explicitly address and reconcile the findings of the remedial investigation (RI) with the data, primary findings and conclusions of a radiological survey conducted by Radiation Management Corporation (RMC) for NRC in 1980-1981 (and published in 1982), and the 1988 NRC Summary Report, including:

Deleted: should include an

Deleted:

Deleted: in the context of the pre-RI findings of the U.S. Nuclear Regulatory Commission (NRC). Specifically, the updated characterization

Deleted: following

- Radioactive contaminants are in two areas (which were subsequently designated as Radiological Disposal Areas 1 and 2). (at page 20 of RMC report)
  Almost all of the radioactivity is from uranium (U-238 and U-235) and its decay products (at page 20). Radioactivity is dominated by thorium-230 and radium-226. In addition, ". . . the radioactive decay of the Th-230 will increase the concentration of its decay product Ra-226 until these two radionuclides are again in equilibrium. . . .the Ra-226 activity will increase by a factor of five over the next 100 years, by a factor of nine 200 years from now, and by a factor of thirty-five 1000 years from now. . . Therefore, the long-term Ra-226 concentration will exceed the Option 4 criteria.[1] Under these conditions, onsite

[1] The 1988 report describes five options under 10 CFR 20.302 for onsite disposal; options 1 – 4 are for "slightly contaminated materials" and option 5 is "onsite storage pending availability of an appropriate disposal method."

disposal, if possible, will likely require moving the material to a carefully designed and constructed 'disposal cell.'" (1988 report at p. 13). And in the Summary section, the 1988 report (at p. 15) states: "A dominant factor for the future is that the average activity concentration of Th-230 is much larger than that of its decay product Ra-226, indicating a ***significant increase in the radiological hazards in the years and centuries to come."*** (emphasis added).

- Subsurface deposits extend beyond areas where surface radiation measurements exceed [NRC] action criteria. "In general, the subsurface contamination appears to be a continuous single layer, ranging from two to fifteen feet thick, located between the elevations of 455 feet and 480 feet and covering 16 acres total area." (at page 15 and similar language at page 21); "a fairly continuous, thin layer of contamination, as indicated by survey results" (1982 report at p. 16); "The contaminated soil forms a more or less continuous layer from 2 to 15 feet in thickness (1988 report p. 5); "the waste was covered with only about 3 feet of soil." (1988 report at p. 1).
- These data are generally "... consistent with the operating history of the site, which suggests that the contaminated materials was moved onto the Site within a few days time, and spread as cover over fill material." (at page 16 and similar language at page 20)
- With regard to hydrology and ground water:
    - "Studies indicate the landfill is on the alluvial floodplain of the Missouri River." (1982 report at p. 3)."About 75 percent of the landfill site is located on the floodplain of the Missouri River" (1988 report at p. 5) "contamination of water in the bedrock aquifer is possible" and **"The water table of the Missouri River floodplain is generally within 10 feet of the ground surface, but at many points it is even shallower.** At any one time, the water levels and flow directions are influenced by both the river stage and the amount of water entering the floodplain from adjacent upland areas" (emphasis added) and "This represents the likely direction of leachate migration from the landfill." (1988 report, p. 6).
        - The final report needs to address how these statements affect potential infiltration into the existing landfill, as well as potential for enhancing the mobility of hazardous substances in that landfill.
    - "Any possibility of disposal on site will depend on adequate isolation of the waste from the environment, especially for protection of the groundwater. It is unclear whether the area's groundwater can be protected from onsite disposal at a reasonable cost." (1988 report at p. 14).

3. The final document should fully address the technical recommendations made by the Office of Superfund Remediation & Technology Innovation about the cap, air and groundwater monitoring, and flood mitigation measures, which were provided in a May 2009 memorandum, but are not cited in Section 8 or mentioned in Section 5.2 of the current draft. The final document should also explain how the containment remedy that is being evaluated and compared to the two additional, excavation-based alternatives would incorporate these recommendations.

Formatted: Font: Bold, Italic
Deleted: ¶
Formatted: Bullets and Numbering
Deleted: ¶
Formatted: Bullets and Numbering
Formatted: Font: Bold
Deleted: reference
Deleted: clarify that
Deleted: will

4. The final document should eliminate the ambiguity in the draft about the design, performance objectives, and expected protectiveness of the landfill cover that is envisioned in the May 2008 Record of Decision (ROD) and would be constructed under that containment remedy. A casual reader of the draft could come away with the erroneous impression that the ROD-selected remedy would not be protective, but would be constructed anyway under this containment alternative.

The ambiguity in the draft arises from claims in Section 5.2.1 that "the ROD-specified cover design may not be sufficiently thick to control radon emissions," while neglecting to explicitly affirm that, under this remedial alternative, the cover would be designed and constructed to include a four-feet thick clay layer (and/or whatever other specifications are deemed necessary during final remedial design) to meet all performance standards and ensure protectiveness.

The final document should clarify that the containment remedy that is being evaluated and compared to the two additional, excavation-based alternatives is a refined version that at a minimum incorporates the technical recommendations by the Office of Superfund Remediation & Technology Innovation in May 2009 about the cap, air and groundwater monitoring, and flood mitigation measures. The final document should be unequivocal about the need to implement a protective remedy, and should address the fact that this may require changes to the containment remedy described in the ROD depending upon decisions that Region 7 makes upon completion of its review of the final SFS.

Deleted: the
Deleted: /enhanced
Deleted: will result from subsequent consideration of remedial design calculations and
Deleted: intent
Deleted: which may entail enhancing

5. Groundwater conditions and the objectives of the planned, interim remedial actions for groundwater should be described in greater detail in Sections 2 and 5.2, respectively.

- There should be a clear statement in the final document reflecting the fact that this is not a final ground water remedy (monitoring only is not a remedial action).
- The description of groundwater quality conditions should identify all constituents that have been detected in groundwater at concentrations greater than their respective MCLs, which trigger the need for remedial action for ground water. The final document could record concisely that interpreting flow conditions and contaminant sources is complicated by the hydrologic/geologic setting (e.g., perched ground water has been observed) and operation of the leachate collection system for the Former Active Sanitary Landfill; however, that does not alleviate the need to provide in the final document a full and accurate characterization of the geologic and hydrologic conditions, consistent with the NCP and Superfund guidance.
  - In particular, the final report should address the MCL exceedences (e.g., Radium) identified in the ROD (see table 5-1), and explain how the approach to be taken for interim remedial actions will result in updated, full and accurate characterization consistent with EPA guidance (e.g., RAGS; June, 2009 Groundwater Restoration policy)
- The expanded discussion of the ground water monitoring plan should fully reflect the May 2009 OSRTI technical recommendations (e.g., installation of new sentinel wells, adaptive monitoring approach).

Formatted: Bullets and Numbering
Deleted: . A detailed description of geologic and hydrologic conditions should not be necessary, but
Formatted: Highlight
Deleted: t
Formatted: Bullets and Numbering
Deleted: .
Deleted: ¶
Deleted: at least

- The ground water monitoring plan should not rely on filtered samples. Among other considerations: (i) the generally accepted method is to analyze un-filtered samples; (ii) there were minimal differences between the results obtained from filtered and unfiltered samples historically, according to the ROD; and (iii) release and transport of colloids, if any, may represent a more important migration-to-groundwater mechanism for radionuclides than would dissolution/leaching.

- The objectives of the ground water monitoring plan should be clearly stated in the final document, which may lead to some differentiation in the details of the ground water monitoring plans under the excavation and containment alternatives. The proposed ground water monitoring program appears inadequate to demonstrate that the containment remedy "performs as required over the post-closure period," because it does not entail any leachate monitoring, although one of the key remedial objectives is "[m]inimize infiltration and resulting contaminant leaching."

- The objectives of the ground water monitoring plan as an interim remedy, and its role in the final remedy for ground water, should be clearly stated in the final document. A reasonable goal for the monitoring program would be to complete the characterization of site-wide groundwater conditions sufficient to evaluate and select a final remedy for ground water. "Statistical evaluation of groundwater data … to … identify long-term trends" should include tests to assess whether substance concentrations are decreasing and are declining at rates that would restore groundwater to its beneficial use in a reasonable timeframe and achieve ARARs throughout the plume, consistent with the NCP and Superfund guidance.. The final report should explain how (and specifically which) data will be collected and analyzed to document this.

6. The final report needs to identify and fully analyze available approaches, which may include movable enclosures, for reducing nuisance attraction to and congregation at the landfill by birds during potential implementation of each of the alternatives. The United States Department of Agriculture, Animal, and Plant Health Inspection Service, Wildlife Services, among other potential authorities, should be consulted to identify appropriate, cost effective means for ensuring that remedial actions undertaken at the Site would not unnecessarily jeopardize public safety with respect to the airport and its operations. At a minimum, potentially effective approaches should be identified and evaluated in the Section entitled 'Technology Screening,' which should provide a thorough analysis of all aspects of each approach (e.g., movable structures may allow work to proceed during inclement weather, which could shorten the duration of the remedial action and provide savings to off-set the cost of the structure).

7. The final report needs to identify available approaches, which may include movable enclosures, for preventing pollution of storm water during potential implementation of each of the alternatives. At a minimum, potentially effective approaches should be identified and evaluated in the Section entitled 'Technology Screening,' which should provide a thorough analysis of all aspects of each approach.

Deleted: limit the program to the analysis of

Deleted: clarified

Deleted: It is not apparent that t

Deleted: is

Deleted: on-site

Deleted: clarified

Deleted: on-site

Deleted: potability

Deleted: Reasonable attempts should be made to

Deleted: consider any significant benefits

Deleted: Reasonable attempts should be made to

Deleted: consider any significant benefits

8. The descriptions of the three remedial alternatives, which appear in Section 5 of the current draft, should identify the expected useful lifetime (or expected "design life") for each distinct cover. This is especially important because of potential radiological hazards described in the 1988 NRC report:

> ". . . the radioactive decay of the Th-230 will increase the concentration of its decay product Ra-226 until these two radionuclides are again in equilibrium. . . .the Ra-226 activity will increase by a factor of five over the next 100 years, by a factor of nine 200 years from now, and by a factor of thirty-five 1000 years from now. . . Therefore, the long-term Ra-226 concentration will exceed the Option 4 criteria.[2] Under these conditions, onsite disposal, if possible, will likely require moving the material to a carefully designed and constructed 'disposal cell.'" (1988 report at p. 13).
>
> Similarly, in the Summary section, the 1988 report (at p. 15) states: "A dominant factor for the future is that the average activity concentration of Th-230 is much larger than that of its decay product Ra-226, indicating a significant increase in the radiological hazards in the years and centuries to come."

The evaluations (e.g., relating to Long Term Effectiveness and Permanence and Compliance with ARARs), which appear in Sections 6 and 7, should objectively consider and compare the design life relative to the duration over which significant radioactivity is expected to be present under each respective alternative. Among other considerations, the final document needs to address the OSRTI recommendation in May, 2009, that the proposed cover meet UMTRCA guidance for a 1,000-year design period. It also needs to address the fact that the typical design life of a RCRA subtitle C or subtitle D cover is thirty years; given the long-term radiological hazards described by the NRC, the final document needs to explain the reliable financial mechanism for ensuring proper replacement every thirty years and how O&M over a period of hundreds of years will be assured

Deleted:

Deleted: ed

9. The final document should provide a full, accurate and up-to-date accounting of evidence, if any, that significant quantities of potentially hazardous wastes and asbestos-containing materials are present in Areas 1 and 2 and should include a coherent, internally consistent evaluation of related (e.g., hazardous waste and mixed waste) issues. In particular, the final document needs to fully characterize and identify RCRA hazardous wastes (e.g., uranium 238 for its chemical toxicity; metals; solvents) and discuss the RCRA subtitle C regulations as a potential ARAR for proper disposal of such hazardous wastes. The presence of hazardous waste may pose significant implementation problems or impose significant costs regarding the excavation alternatives. As such, the premise for using a Sub-title D cover (which generally is not designed to prevent all

Comment [cao1]: We decide if it's authoritative after PRP is done writing it

Deleted: n authoritative

Deleted: So, for example, if t

Deleted: is deemed to

Deleted: , then

[2] The 1988 report describes five options under 10 CFR 20.302 for onsite disposal; options 1 – 4 are for "slightly contaminated materials" and option 5 is "onsite storage pending availability of an appropriate disposal method."

water infiltration) as a foundation (starting point) for a final cover for Areas 1 and 2 does not appear appropriate (e.g., the identification and evaluation of related ARARs should change).

Deleted: is necessarily undermined

SCOPE AND ORGANIZATION

10. The opening sentence of the Introduction (Section 1) should clarify the purpose of the document, which is reflected by the following sentence: "As a result of its internal deliberations and its further consideration of certain comments provided by interested community members, EPA determined that a Supplemental Feasibility Study (SFS) is warranted. This SFS will be added to the Administrative Record for this site. Among other things, this document refines the description and evaluation of the containment remedy that was selected in the Record of Decision for Operable Unit One, which was issued by Region 7 in May 2008 ("ROD"). It also addresses in detail various facts and findings contained in two NRC reports that evaluate this site."

Deleted: might be accomplished

Deleted: adding

Deleted:

Deleted: amend

Deleted: and accomplish the objectives for the Feasibility Study for Operable Unit #1

Deleted: T

Deleted: enhances and

11. Section 1.1 might be more appropriately entitled "Scope" if the relevant discussions about scope and consolidated therein. On that basis, the first sentence of Section 1 should be moved to become the opening sentence in Section 1.1 and the first two complete paragraphs on page 3 (about NCP requirements) should be moved to Section 1.1.

12. If the changes recommended in comment #11 above are made, then Section 1.2 might be more appropriately entitled "Approach." On that basis, the second sentence of Section 1 should be moved to become part of the opening of Section 1.2.

13. It is logically awkward to partially discuss cleanup levels (Section 2.2) in advance of a discussion of ARARs (Section 3.1, which includes additional discussion about cleanup levels), and within a section that otherwise is devoted to site-specific information about land use, operations, and hydrology. A more satisfactory alternative organization would entail a separate discussion of RIM presence, distribution and extent (say new Section 4) that follows the discussion of ARARs (Section 3.1) and precedes the 'Technology Screening' (currently Section 4). If a new Section 4 is created for these purposes, then Section 2 could still retain a general discussion of the nature of the RIM (e.g., origins, amounts disposed over what time period, primary radiological parents, expected longevity and in-growth of the radioactivity), but would not introduce the volume estimates.

14. We recommend a separate section devoted to the characterization of radiologically impacted materials (RIM) to consolidate the relevant discussions and conclusions that are dispersed in the current draft (e.g., the discussion of uncertainty in the volume estimates is in Section 5.3.1 in the current draft) and repeat key findings that appear in the May 2008 ROD but not yet in the current draft (e.g., "… data collected during the Remedial Investigation are consistent with this account" (at page 2 of the ROD), referring to the reported disposal of 8,700 tons of leached barium sulfate residues at the Site). Such a separate and/or new section would provide an opportunity to provide a full, accurate and up-to-date characterization of the RIM, one that (among other things)

Comment [cao2]: Since a number of key finding in the ROD are either not completely accurate or misleading, this is asking for trouble – which findings do we want repeated? We should be specific here, and make it clear that the other ones should NOT be repeated.

Let's talk about this one

Formatted: Highlight

Deleted: re-cast the

is consistent with the statute, NCP and EPA guidance (e.g., principal threat waste guidance), and consistent with comments provided on the March 22 draft work plan (see comment #2 above). It also will provide for a transparent discussion about whether the RI data are consistent with or different than the NRC data and/or can be reconciled with various statements and conclusions in those reports (for example, that radioactive soil was disposed during a limited portion at the end of the operating history of the two radiological areas), including all those described in comments 1, 2 and 8 above).

Deleted: with respect to

Deleted: 's

Deleted: , and to state/repeat opinions

Deleted:

Deleted: (see

Deleted: #

15. To help make this document more self-sufficient, a paragraph summarizing the scope of the remedial investigations of RIM presence should be added, which should incorporate information about boring density that is provided in Section 5.3.1 (page 58) of the current draft. Such a paragraph would provide an opportunity to explain the extent to which the NRC data were considered and evaluated in designing the RI and how specifically they can be reconciled. This content could be incorporated into a new Section 4, dedicated to a discussion of RIM occurrences and spatial extent, as recommended above.

Deleted: record/re-state that

16. To help make this document more self-sufficient and "reader-friendly," Section 2 (suggested title: Summary of Key Site Conditions) should include concise, coherent presentations of the full range of site-specific information that potentially bears upon an evaluation of the additional alternatives. On that basis, the document at a minimum should include in Section 2:

- a readily identifiable sub-section that consolidates the dispersed information about surrounding land use (i.e., background information reported in Sections 2.1, 3.1.2.2.1, 5.3.4.1, and elsewhere in the draft). Such a dedicated sub-section would provide a good opportunity to identify and illustrate the proximity of the airport and orientation of its runways and the proximity of residential neighborhoods.

- additional information and potentially also clarifications about the nature and location of current on-site operations (e.g., explanation of why a solid waste transfer station and borrow area are essential to current site operations if wastes are no longer disposed on site; modification of Figure 2 to clarify Site boundaries and identify undeveloped area(s) of the Site). Such information would provide a foundation for the subsequent discussion of possible candidate locations when evaluating the potential appropriateness of a newly constructed on-site disposal unit.

Deleted: for

- existing land use and ground water use restrictions for the Site, including the Negative Easement and Declaration of Restrictive Covenants Agreement mentioned on page 24 of the draft.

Additional information about transportation routes (e.g., truck routes into and out of the site, location of nearest railroad line) and truck traffic (e.g., number of trips into and out of site under current operations, if available) might also warrant inclusion in Section 2 to provide a basis/context for subsequent discussions and evaluations about community impacts of the additional excavation alternative (i.e., "short-term" effectiveness) and infrastructure needs of the

additional excavation alternative. Should compare how Corps handled these issues for the cleanup of similar wastes it did nearby.

17. To the extent that it provides information and engineering opinions about "solids separation" technologies (see Section 4.3.3) or *ex situ* treatment technologies, which are not discussed in Section 4 in the current draft, the final SFS should provide a full, accurate, up-to-date, balanced, thoughtful, and internally consistent analysis.

18. Additional explanation or clarification may be warranted to provide assurance that shredding is a suitable pre-treatment step to facilitate size separation of waste materials. One curious aspect about the current draft: it states that "shredders would be employed as a pretreatment step prior to a solids separation process" (See Section 4.1.2, page 41), which seems questionable on its face. Because such a pre-treatment would tend to reduce the size of municipal solid waste materials, it could be counter-productive as a treatment step in advance of solids separation processes that rely upon differences between small soil particles and larger pieces of solid waste, such as are cited in Section 4.3.3 (see pages 41-42).

19. The draft SFS proposes (in Section 3.3.2) to add a new Remedial Action Objective (RAO), which conceptually may be an appropriate approach to take. The proposed fifth RAO should not be included as written, however, because RAOs generally should not prescribe specific remedial actions (e.g., waste removal) and should apply to all remedial alternatives that are being considered and evaluated. In addition, the nature, complexity, and requisite duration of the institutional controls generally are appropriate matters to consider when evaluating the long-term effectiveness and reliability of the remedial alternatives (e.g., as part of the nine criteria analysis), not as specific language in an RAO.

20. The final SFS should include an appropriately worded RAO to address an interim remedy approach (i.e., monitoring only at this point in time) for ground water. By itself, groundwater monitoring is not considered as a remedial action designed to attain any of the RAOs stated in the May 2008 ROD (i.e., it does not prevent direct contact with landfill contents or radiation, does not minimize infiltration or leachate generation, and does not control surface water runoff or radon and landfill gas emissions.)

21. Because the Negative Easement arose from an agreement between the Bridgeton Sanitary Landfill and the airport owner (see page 24), which did not involve MDNR, it should be discussed in a separate section, rather than within a section pertaining to MDNR solid waste regulations. We recommend including it in the proposed discussion of existing institutional controls in Section 2 (see comment #16 above for further explanation). This discussion should also summarize the outcome of recent discussions with appropriate airport authorities about the easement in the context of alternatives being evaluated in the SFS.

22. Documentation of the existing on-Site land use restrictions in an appendix to the final SFS, as is done for the Negative Easement (Appendix B), warrants consideration.

Comment [cao3]: This is just a rough placeholder of a sentence – someone with more detailed knowledge should develop it in more detail.

Comment [cao4]: We decide if it's authoritative after PRP writes it

Deleted: , and authoritative

Deleted: and are

Deleted: matters to be prescribed in the

Deleted: s

Deleted: provide a foundation for choosing groundwater monitoring as a remedial component for the three alternatives

Deleted: Literally speaking

Deleted: does not

Deleted: the two

Comment [cao5]: Why? how is it relevant? We need to say what we think is the point of adding it in – this should not be so open-ended

CLARIFICATIONS AND CAUTIONS

23.

24. Although the initial Statement of Work is also part of the Administrative Record, this document should refer to the final Work Plan as a primary source of information about the scope and technical approach of the SFS.

25. Because the Statement of Work was primarily conceptual and does not displace or change any statutes, regulations or guidance, it does not represent a comprehensive, final statement about the scope or approach of the SFS or the scope of EPA's considerations in making remedy selection decisions. The final SFS should not include any statements that compare and contrast the Statement of Work and the final Work Plan, nor should it include any statements that could be construed as criticizing or identifying a shortcoming in the Statement of Work. (For example, the second complete paragraph on page 3 opens with "Although not required by the SOW (EPA, 2010), the NCP requires …" The phrase "Although not required by the SOW (EPA, 2010)" is unnecessary and could be misleading.)

26. The final SFS should specify which "supplemental evaluations" by TetraTech EMI (TtEMI) were relied upon by Engineering Management Support, Inc. (EMSI) (see page 2 of the current draft SFS, Section 1.2). The final document needs to clarify whether EMSI relied only upon TtEMI's initial list of potentially relevant disposal facilities and which unit costs for off-site disposal were used.

27. As stated in the 1988 NRC report (*Radioactive Materials in the West Lake Landfill*, NUREG Publication1308, page 1), the NRC during a site inspection in 1974 determined that approximately "43,000 tons of waste and soil", comprised of leached barium sulfate residues mixed with top soil had been disposed in 1973 at the West Lake Landfill and "covered with only about 3 feet of soil.". This same NRC report notes that this landfill "was closed in 1974 by the Missouri Department of Natural Resources (MDNR)." This contemporary reference (and/or other contemporary references), rather than the 2009 report by TtTEMI, need to be cited as the basis for information summarized in the SFS about the operating history of the non-active landfills known as Radiological Areas 1 and 2, unless there is new information that conclusively establishes that the NRC report was incorrect.

28. The draft SFS needs to accurately describe the extent and timeframe for solid waste disposal activities (including non-radioactive solid wastes) in the non-active landfills known as Radiological Areas 1 and 2; as written, the draft SFS suggests they were limited to the early 1970s. The sub-section about operational history needs to clarify: 1) the overall operating period; and, 2) whether the design and construction of these two non-active landfills satisfy the current, primary design criteria for a RCRA Subtitle C or D landfill.

29. The final SFS needs to explain and justify why the UMTRCA standards would not be relevant and appropriate for the Radiological Areas 1 and 2, which has radioactive materials near

Comment [cao6]: This basically just repeats comment #10 above

Deleted: The opening sentence of the Introduction (Section 1) should clarify the purpose of the document, which might be accomplished by adding the following sentence: "As a result of its internal deliberations and its further consideration of certain comments provided by interested community members, EPA determined that a Supplemental Feasibility Study (SFS) is warranted to amend the Administrative Record and accomplish the objectives for the Feasibility Study for Operable Unit #1

Deleted: ."

Comment [cao7]: See comment above

Deleted: the

Deleted: , authoritative

Deleted: is implicitly augmented by applicable

Deleted: and pertinent EPA

Deleted: was not intended as

Deleted: On that basis, t

Deleted: and could imply an unwarranted criticism

Deleted: We assume/infer that

Deleted: may have

Deleted: perhaps certain

Deleted: T

Deleted: determined in

Deleted: 1974

Deleted: (as reported in *Radioactive Materials in the West Lake Landfill*, NUREG Publication1308, page 1).

Deleted: should

Deleted: could leave the impression that

Deleted: should

Deleted: . It should also clarify

Deleted: should justify,

Deleted: , or clarify

the surface in certain locations; we note that those standards are deemed (see page 18) relevant and appropriate for the Crossroad property, which is also located on the Site.

30. The main text (as opposed to an Appendix) of the document should fully and accurately describe the volume estimates; the need/purpose of those estimates should be clearly described (e.g., is the goal to obtain an upper-bound or a lower-bound estimate of the volume?). The discussion of uncertainty in the volume estimates, which is in Section 5.3.1 of the current draft, should clarify whether the methods and assumptions used in the estimation are expected to systematically over-estimate or under-estimate the volume. This content could be incorporated into a new Section 4, dedicated to a discussion of RIM occurrences and spatial extent, as recommended above.

31. The purpose of Section 4.2 and how it relates to existing language in the FS needs to be clarified in the final document. In the current draft, Section 4.2 suggests that short-term monitoring, physical treatment, transportation, and off-site disposal, as identified and described on pages 39 to 44, are "additional" technologies that were not considered in the FS and only now warrant consideration. Since the original FS evaluates "selective excavation of radiologically impacted materials containing higher levels of radionuclides as a potential remedial technology" and a "partial excavation" alternative with off-site disposal (L6), it is hard to say that short-term monitoring, physical treatment, transportation, and off-site disposal were not considered in the original FS. If there is any significant new information about short-term monitoring, physical treatment, or transportation that would alter the findings of the previous evaluation, the final FFS should clearly identify and explain it.

32. The discussion of siting of an on-site cell (Section 5.3.4.1) should include a summary or refer to documentation of recent discussions with the airport authority about waiving the Negative Easement. In light of the report during our July 2010 meeting that there was no feasible on-site location for a new, engineered disposal cell for the radioactive wastes, it is surprising that the draft SFS does not unequivocally reach that conclusion in Section 5.3.4.1.

33. The sub-sections that describe or present the NCP's nine criteria evaluation of the individual remedial alternatives should not embark upon a comparative analysis of the alternatives or response actions not envisioned in the alternative. So, for example, Section 5.2.2.5, which pertains to the containment remedy described in the May 2008 ROD, should not and need not provide descriptive information about the excavation remedies (see page 55). Section 6.2.1.4, which pertains to the containment remedy described in the May 2008 ROD, should not and need not advance arguments about the practicability of *in situ* or *ex situ* treatment, as the current draft does (see page 94). Likewise, Section 6.2.2.4, which pertains to the "full" excavation-and-off-site-disposal alternative, should not and need not advance arguments about the practicability of *in situ* or *ex situ* treatment (see page 103) and should not state, although true, that "none of the alternatives [emphasis added] will reduce the toxicity, mobility, or volume of the waste material through treatment technology."

Deleted: , when they

Deleted: clarify the need/purpose of

Deleted: , which is not disputed, but is mentioned only in the introduction to Appendix A, and their intent

Comment [cao8]: Since NRC report talks about a single, contiguous layer, I deleted language that suggests it may be dispersed –

If this language is to stay in, need to first see current data that clearly demonstrates the NRC was wrong --

Deleted: or the extent of dispersal of radioactive soil with other waste materials

Deleted: its differentiation from

Deleted: should

Comment [cao9]: We need to be clear here – does it suggest or not?

Let's talk about this

Deleted: potentially leaves the impression

Formatted: Highlight

Comment [cao10]: For one thing, monitoring is not a remedial action, so this is confusing

Deleted: as general

Deleted: response actions

Deleted: , in fact,

Deleted: relevant to

Deleted: also

Deleted: Nor is it clear from the introductory portions of Section 4.1 in the current draft that we now have significant new information about short-term monitoring, physical treatment, or transportation that would alter the findings of the previous evaluation.

Deleted: , relative to the NCP criteria,

Formatted: Highlight

Comment [cao11]: Not sure what this is getting at – "comparative" by its very nature means comparing one alternative against others –

Let's talk about this

34. The final document needs to provide "fair and balanced" evaluations of the remedial alternatives. As currently written, we do not believe, for example, that the evaluation of environmental impacts in the draft report is fair and balanced. Thus, the draft appropriately states for both the excavation remedy (Section 6.2.2.5.3) and the containment remedy (Section 6.2.1.5.3) that "disturbance of the landfill surface would destroy those portions of the habitats that currently exist on the surface of Area 2, forcing wildlife to migrate to other areas." But only in the case of the containment remedy (see Section 6.2.1.5.3) does the draft SFS state that "this disruption would be temporary" and "[n]o measurable long-term impacts to plants and animals in surrounding ecosystems are expected."

Deleted: should
Deleted: strive to be
Deleted: in its
Deleted: T
Deleted: not
Deleted: , for example
Deleted: It

35. The final FFS needs to contain specific factual statements that are supported by data, rather than general characterizations. So, for example, the final report needs to report the activity concentrations of uranium and thorium in barium-sulfate residues (see page 7, Section 2.2.1), rather than to claim without further documentation that barium-sulfate residues contained only "traces" of uranium and thorium. Likewise, statements that the radioactivity levels in the waste materials are "low" (See page 94) needs to be backed up with specific, credible sampling data. Similarly, given the specific language in the NRC reports to the contrary, the final report needs to provide a readily recognizable, verifiable, scientific basis for the characterizations (see page 8) that "radionuclides are present in a dispersed manner throughout the landfill deposits" and "the soil containing radionuclides is intermixed and interspersed within the overall matrix of landfill refuse, demolition and construction debris, fill materials, and unimpacted soil" or for the claim (see page 92) that "Long-term site management plans and institutional controls would be robust and durable." [underlining added for emphasis]. Among other considerations, the statement that "radionuclides are present in a dispersed manner throughout the landfill deposits" appears to be misleading and inconsistent with certain conclusions reached in the NRC reports (e.g., see quotes above in #2) and the RI report, which suggest a more limited, but well-defined vertical distribution (e.g., "In the northwestern part of Area 1, radiologically impacted materials were identified at depths generally ranging between 0 and approximately 6 feet" (at page 92 of the April 2000 RI report); Radiologically impacted materials were generally found at depths ranging between 0 to approximately six feet in the northern and southern parts of Area 2 (at page 97 of the RI report)).

Deleted: As a general matter of style,
Deleted: preferred over
Deleted: , unless the factual basis for the characterization is also stated or is readily apparent to a casual observer.
Deleted: it would be more informative to
Deleted: Ditto, regarding
Deleted: Likewise,
Deleted: re is not a clearly stated
Deleted: or

36. The final report should minimize unnecessary, duplicative information. For example, the history of this document's development (i.e., letters and workplans) is repeated throughout the draft (see, for example, introduction to Sections 2.3 and 4.2, in addition to opening paragraph of Section 1), as are statements that the "complete rad removal" alternative wouldn't really remove the radioactive materials completely (see, for example, page 1, second paragraph of Section 2.2.2, and fourth paragraph of Section 3.1.1.1.1) and that EPA required two additional alternatives to be evaluated (see, for example, last sentence in Section 1.1 and introduction to Section 4.2, in addition to third paragraph of Section 1.1). As a general matter of style and readability, non-critical information of this kind need not be restated repeatedly throughout a document.

Deleted: We recommend that
Deleted: t
Deleted: document
Deleted: be carefully edited to
Deleted: within the report
Deleted: most types of

ADDITIONAL EDITORIAL SUGGESTIONS AND TYPOGRAPHIC ERRORS

page 9, risk based cleanup level for uranium should not be above background. This is inconsistent with EPA's Role of Background policy.

page 9, cleanup levels for uranium should be both in terms of mass for total uranium non cancer risk, and activity per uranium isotopes for cancer risk

page 28, third paragraph, not sure the basis of calling radioactive contamination "low activity" since most of the disposal units think it is too hot to take. UMTRCA sites generally are not above 1,000 pCi/g of radium 226, but Westlake has multiple hits over 10,000 pCi/g and one over 4 billion.

page 57, third paragraph states design phase survey will be conducted using 40 CFR 192 and MARSSIM. Since the approach in 40 CFR 192 uses an average, while MARSSIM uses more statistical tests, how would this be accomplished? When discussing 5 pCi/g standard in the document to define the RIM, the final report needs to clearly indicate which approach is being used: 192 area averaging, MARSSIM statistical test, or a not-to-exceed approach? See also page 60, third paragraph, first bullet.

page 94, first paragraph. The draft report states that treatment will not be used due to large volumes of material with low activity levels, and that radionuclides cannot be destroyed. We believe it is inaccurate to radium levels of hundred, thousands and tens of thousands to be low activity; these levels normally are associated with high activity – can we provide a reference here? The draft report does not indicate whether any stabilization and/or soil separation technologies were considered; the final report needs to address the potential use of these technologies.

page 105, second and third paragraphs. Characterizing the waste as "low activity" is further undermined where the draft report states that a remediation worker will get 499 mrem/yr exposure for off-site disposal option, and that OSHA equipment and practices may not provide adequate protection for workers.

page 107, fourth paragraph, The draft report does not provide a reason or basis for why the remedy is constrained by $10 million per year?

page 108, third paragraph, was there consideration given to send most waste to U.S. Ecology, with higher containers going to another facility (e.g., Energy Solutions)? We note that blending to change waste characteristics for disposal is generally inconsistent with EPA practices.

page 114, last paragraph. The draft report does not describe what consideration was given to separating the trash from the radioactive material to have less volume of waste to dispose. The final report needs to fully and accurately address this issue.

Comment [cao12]: Maybe need to add "owner" or "operator" in here somewhere – "disposal units" don't "think"

Formatted: Highlight

Deleted: .

Deleted: are you envisioning using

Comment [cao13]: We need to clearly spell out what our concern is here – is it that approach for defining RIM is not clear? Or something else?

Comment [cao14]: This comments sounds more like one of the major ones and should be included in first part of the document – maybe a new item #10?

Deleted: S

Deleted: Did you consider the

Deleted: ? What would be considered

Deleted: Did you consider

Deleted: ?

Deleted: States

Deleted: . Also

Deleted: How is this "low activity" waste?

Deleted: is

Deleted: B

Comment [cao15]: Do we have NCP preamble statement or some policy/directive that addresses this? If so, should mention it here

Deleted: Was

Tables section, table 5, PVC-21, depth 18 feet. Is the sample of 4.4 billion pCi/g of radium accurate or a misprint?

Appendix F, page 6, footnote a, states Region 9 soil screening levels used for chemical risk assessment. The final report should use Regions 3, 6, 9, regional screening level calculator in order to provide a more accurate, up-to-date evaluation.

Deleted: e

Deleted: Why not

Appendix F, page 11, last paragraph, the report needs to provide the rationale for using RESRAD in that situation.

Deleted: what was

Appendix F, page 54, first paragraph, and table 8-4, second column. The PRG calculator does include external as well as inhalation for the ambient air scenario, as does the indoor scenario in the BPRG calculator.

Comment [cao16]: Not sure what the comment here is – that final report needs to use PRG calculator to be consistent with our current guidance and approach?

Appendix F, page 71, table 10-3, column 5. What is the source of these concentrations? This appears to be much lower than the survey results.

Deleted: .

Comment [cao17]: Again, what do we want in the final report? Data? Explanation?